

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A liquid soil conditioning composition in the form of an aqueous dispersion of calcium carbonate and sulfur wherein the atomic ratio of calcium to sulfur is in the range 0.5 : 1 to 2.0 : 1.
2. A liquid soil conditioning composition as defined in claim 1 wherein the atomic ratio of calcium to sulfur is in the range of 0.75 : 1 to 1.5 : 1.
3. A liquid soil conditioning composition as defined in claim 2 wherein the atomic ratio of calcium to sulfur is in the range 0.9 : 1 to 1.3 : 1.
4. A liquid soil conditioning composition as defined in any one of claims 1 to 3 wherein the composition includes a suspension or dispersing agent.
5. A liquid soil conditioning composition as defined in claim 4 wherein the suspension or dispersing agent is selected from bentonite and polyvinylalcohol.
6. A liquid soil conditioning composition as defined in any one of claims 1 to 5 wherein the calcium carbonate is in non amorphous form.
7. A liquid soil conditioning composition as defined in claim 6 wherein the calcium carbonate is rock lime.
8. A liquid soil conditioning composition comprising rock lime suspended in water wherein the rock lime has particle size average diameter less than 10 μm with maximum particle size 50 μm .
9. A liquid soil conditioning composition as defined in claim 8 wherein the average diameter is less than 5 μm with maximum particle size 25 μm .

Sub A³ → 10. A liquid soil conditioning composition as defined in claim 8 or claim 9 wherein the composition further comprises a suspension or dispersing agent that is a water soluble polymer.

5 11. A liquid soil conditioning composition as defined in claim 10 wherein the water soluble polymer is polyvinylalcohol.

Sub A⁴ → 10 12. A liquid soil conditioning composition as defined in any one of claims 9 to 11 wherein the composition comprises 700 – 1000 g/litre of water of calcium carbonate.

13. A liquid soil conditioning composition as defined in claim 12 wherein the amount of calcium carbonate is about 900 g/litre of water.

20 15 14. A method of improving agricultural productivity of clay soils without substantially changing the pH of the soil by applying an effective amount of a liquid soil conditioning composition in the form of an aqueous dispersion of calcium carbonate and sulfur wherein the atomic ratio of calcium to sulfur is in the range of 0.5 : 1 to 2.0 : 1.

20 15. A method of increasing the pH of agricultural soils by applying an effective amount of a liquid soil conditioning composition comprising rock limestone suspended in water wherein the rock lime has particle size average diameter less than 10 µm with maximum particle size 50 µm.

25 Sub A⁵ → 16. A method of improving agricultural soil productivity of clay soils as defined in claim 14 when the liquid soil condition composition is defined as in any one of claims 2 – 7.

30 17. A method of increasing the pH of agricultural soils as defined in claim 15 wherein the liquid composition is defined as in any one of claims 9 – 13.